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to cause a corresponding setting or change in the stiffness of the footwear.

90. The system of claim 89 wherein the portion comprises a heel portion of the footwear.

91. The system of claim 89 wherein the stiffness is increased for locomotion of a person. 5

92. The system of claim 89 wherein the control electronics are configured to provide a stiffness within a certain range corresponding to a predetermined level of comfort.

93. A method for resisting motion of a mechanical interface included in a device, the device including an electroactive polymer transducer comprising at least two electrodes an electroactive polymer in electrical communication with the at least two electrodes and coupled to the mechanical interface, the method comprising: a) actuating the polymer out of phase from motion of the mechanical interface that causes the polymer to contract, and b) absorbing electrical energy in generator mode out of phase from motion of the mechanical interface that causes the polymer to expand wherein the polymer has an elastic modulus at most about 100 MPa. 10 15 20

94. The method of claim 93 wherein the motion of the mechanical interface is a vibratory motion.

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95. The method of claim 93 further comprising dumping the electrical energy generated in generator mode.

96. A system for providing a desired stiffness using an electroactive polymer transducer, the system comprising:

a device comprising

a mechanical interface capable of displacement,

a transducer comprising at least two electrodes, and an electroactive polymer in electrical communication with the at least two electrodes and coupled to the mechanical interface, the polymer arranged in a manner that allows deflection of the polymer corresponding to displacement of the mechanical interface wherein, during operation of the transducer a portion of the polymer is deflected and wherein the portion of the polymer has an elastic modulus below about 100 MPa; and

control electronics in electrical communication with the at least two electrodes and designed or configured to set or change an electrical state of the transducer in order to cause a corresponding setting or change in the stiffness of the device.

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